

Citizen Engagement in Climatic Change and Sustainable Development

Dr Nirmal Kumar Betchoo

Doctor of Business Administration,

SMC University, Switzerland

ABSTRACT

This paper assesses the importance of citizen engagement in climatic change and sustainable development at the national level in Mauritius. Since the island nation has ratified international conventions on sustainable development with significant actions like the preservation of wetlands, the creation of nature parks, the plantation of mangroves along with taxation on carbon-emitting vehicles and plastic that spoils the natural environment, it is time to bring Mauritian citizens to get better involved in issues that directly affect them and will impact their future. It is an undeniable fact that citizens at all levels of society must be sensitised on issues affecting the country's development and not expect top-down approaches and action initiated by the government. It is important that citizens play their part of the game since without their engagement at the local level, little can be expected with regards to better sustainable living. In a country having one of the densest populations in the world, it is the right time to set initiatives that will make citizens more conscious and accountable for their future. This paper considers citizen engagement at three main levels. It firstly explains that primary and secondary schools need to undertake action with regards to the natural environment. Role plays and positive action will be triggers to future responsible action. It then focuses on the need for adult citizens living in communities to be sensitised on environmental issues and take the responsible action to avoid polluting the natural environment for which they might have been held responsible for some preventable environmental hazards. The third audience comprises non-governmental organisations (NGOs) that are already engaged to some extent on issues regarding climate and sustainable development but should be further encouraged to take actions that go in favour of environmental protection. The objective of the paper is to consider how to engage stakeholders, namely citizens of Mauritius, in a more pro-active role regarding their immediate environment. As an island nation, Mauritius has endorsed the emblem of 'Maurice Ile Durable' with a general expectancy that public authorities and private partners are responsible to develop guidelines for future responsible action. A viable option would be society members initiating and undertaking their own action regarding a safe and clean environment free from hazards. Through responsible action and greater awareness of environmental changes, citizen engagement can pave the way for the long-term sustainability of our fragile environment. Forfeiting this aspect might not reap the necessary result and will be an impending problem facing the twinned concepts of climate change and sustainable development.

Key words:

citizens, empowerment, climatic change, sustainable development

Introduction

The Government of Mauritius has given due importance to climatic and sustainable development issues affecting small-island developing states. The impact of climatic change was firstly openly voiced in the 1990s in Mauritius after the Rio Summit in Brazil which focused on the depletion of the ozone layer and the consequential after-effects likely to affect humanity [1]. Since then, there has been an effort to sensitise public opinion on this issue and it can be argued that a majority of the Mauritian population is knowledgeable of environmental issues including climatic change. Recent disasters like the flash floods in Port Louis region in 2013 and the bleaching of corals in Blue Bay Marine Park raised enough attention from the public [2]. Government, from its side, has encouraged positive action regarding sensitisation campaigns for the public during important dates like the Earth Day, the World Wetlands Day, etc. in order to keep public interest active. Else, there have been actions that have also been directed to the protection of the environment like taxation on the use of plastic bags, taxation of high carbon monoxide emitting vehicles. Proactive actions have been the campaign to use solar water heaters and efficient electrical accessories like energy-efficient air conditioners, incandescent bulbs including the disposal of quartz batteries.

It is clear that there is a link between climatic change and energy efficiency. Although both terms might be independent from each other, the climate is directly affected by emissions of carbon created by industries, cattle and human activity. Obviously, industrial emission of gases leads in a more pronounced way to the warming of seas but a better outlook of the natural environment and industry would be positive measures capable of halting climatic change. It is stated that a 2 degree Celsius rise in temperature by 2050 would accelerate global warming [3]. Though the GHG emission of Mauritius is insignificant, warming of our climate and its effects on our natural and ecological system are unavoidable and already palpable. Analyses of temperature

recorded at Mauritius and its outer islands show a definite warming trend. Average temperature at all stations is rising at the rate of 0.15 °C per decade and has risen by 0.74 – 1.2 °C when compared to the 1961-90 long term mean (MMS)[4]. Small-island developing states are not directly responsible for climatic hazards but it is a known fact that they will be the first to be affected by the rise in sea levels. Flat-lying nations like Maldives, Bangladesh and the Netherlands would be the first to suffer from the rise of seas but that might also affect Mauritius that depends a lot on its tourism industry. Some 40 percent of the world's population lives within 100 kilometres of the ocean, putting millions of lives and billions of dollars' worth of property and infrastructure at risk [5].

The need for Citizen Engagement

The idea of centralising decisions regarding climate change and sustainable development looks more like a passive attitude given that the expected results from the public have been mitigated. Inclusion of a broad range of stakeholders is frequently promoted in policy responses to climate change [6]. Given widespread efforts to increase public involvement in many spheres of environmental management, the call for an inclusionary approach to tackling future climate risks has been a logical step. This is particularly so for climate change adaptation, which is likely to be organised mostly at a non-global scale [7]. For instance, environmental pollution has not substantially improved in the same way public responsibility vis-à-vis the protection of the environment. Littering has been ongoing over the years despite governmental claim to penalise offenders. Given, current trends in population growth, industrialisation, urbanisation, modernisation and income growth, electricity consumption is expected to increase substantially in the coming decades as well[8]. Although the public relates the impending threat of climate change to a 'laissez-faire' attitude of some irresponsible people, there is little evidence of concrete public reaction in Mauritius.

Engagement at three levels

The researcher has assessed from existing literature and findings that citizen engagement is a major contributing factor to addressing climate and sustainable development. Such engagement must come from targeted audiences that will have the responsibility to be more sensitised and responsive with regards to environmental issues. The three selected audiences are: primary and secondary level students, the public at large and non-governmental organisations associated with climate and sustainable development issues. There must be the support from the government, related ministries and authorities that enforce law enactment and abidance.

Target Audience One: School Students

The first audience which calls for Citizen Engagement in Mauritius is school children. Primary school students (6-12 years) and secondary school students (13-18 years) are the most responsive ones to climate change. Since the school remains an important influencer of children's attitudes today and in the future, it is important to address this audience first. Children's responsiveness to climate change is already fostered by education in subjects like Health and Environmental Science and Geography [9]. Teachers should be role models in bringing young children to learn and be conscious of climatic changes. Children who are aware, involved and empowered are potentially effective agents of change within communities to foster an appropriate approach to address climate change [10]. Taught courses on the environment are helpful but should be limited for academic purposes only. The Ministry of Education can favour campaigns that will sensitise children to be more positively guided to environmental changes.

Next comes secondary school students. In a period of adolescence with a greater opening to education and social issues, secondary school students can reinforce upon values and teaching gained during their earlier years. Given that adolescence is one of the most turbulent times in the life of a human being, it could also be the right moment to inculcate values that are concerned with the

environment. The development of knowledge and engagement in environmental activities and workshops will be triggers to positive action against climate change and sustainable development [11]. Climate change education for sustainable development integrated into curriculum frameworks, the syllabus for secondary education and TVET in target countries, with a priority on those planning a cyclical revision of their curricula [12]. Not giving enough attention during a child's growth and development stage in adulthood might be defeating for the future.

Target Audience Two: The Community

Sensitising public opinion on climatic change looks like a rhetoric since it is considered as one of the major stakeholders in climatic change. National campaigns in Mauritius have had their say but such an audience is broad-based while messages might be addressed vaguely. Public support for 'sustainable development' notions of long-term strategic action and inter-generational equity cannot be assumed: 'It appears that while the public are engaging with the decision-making process, they are failing to address the drivers of the process, i.e. the need for more sustainable approaches to environmental management' [13]. It is the community that counts since it pertains better to neighbourhoods. This sensitisation will vary from one area to the next but may have better impact than if it targeted the greater audience. The community is better referred to as the group of people living in one location with a defined environment with particular needs. For example, fishermen living in one community will have different needs to lawyers residing in an urban community. Although environmental hazards affect the whole population, involving citizens at the community level would be a well-targeted activity. Effective action across communities would reap better values. For example, the construction of concrete buildings near natural locations could target effectively residents of that location. These could be urban dwellers living in places devoid of vegetation and buildings which become expensive hot-spots regarding the emission of carbon and related hazards.

Target Audience Three: Non-governmental organisations

Another critical audience that should be included within citizen empowerment would be non-governmental organisations (NGOs). NGOs represent an important link between the central governmental authority and the public at large. These not-for-profit organisations impact the public since they are involved in activities that directly sensitise public awareness. A starting point is the issue of interpretation of 'participation', which has a fundamental influence on how agencies interact with wider stakeholders [14].

The success of NGOs within this frame would be actions that they would undertake on this issue. The first one would be sensitisation campaigns through the organisation of events and open days with the view of directing attention on environmental hazards. Far from using intimidating and directed tones, NGOs could be effective in channelling decisions and key concepts withheld at the State level regarding climate and sustainable development and bring the issues to the public. Mangrove swamps protect coastal areas from erosion, storm surge and tsunamis and the act of planting mangroves helps prevent soil erosion and halt the rise of seas would be a successful effort through co-ordinated efforts jointly made by all stakeholders but involving NGOs in fostering action regarding the environment [15].

Crystallising attention on key issues

The concept of vulgarising knowledge related to climatic change and sustainable development are not enough. Once the three levels of target audience have been identified, it becomes important to drive the attention of the stakeholders concerned to the critical issues therein. A selection of key issues on climatic change and sustainable development are listed as follows:

Table 1: Key problems affecting climate and sustainable development

- Rise in temperature between 0.74 and 1.2 °C between 1960 and 1990
- Warming trends in outer lying islands like

Rodrigues, Agalega and Saint Brandon by 1.0 degrees

-Rise in sea level in Port Louis region by 2.1 mm/year for the last 10 years

-Warming of the atmosphere impacting the hydrologic cycle over the southwest Indian Ocean. The total decrease during the last ten years is about 8% when compared to the 1950s

-A lengthening of the intermediate dry season, the transition period between winter and summer, has been observed

-Heavy rainfall events leading to numerous flash floods and temporary interruption of certain socio-economic activities during the summer months of February and March has increased

-The frequency of extreme weather events, heavy rains and storms of tropical cyclone strength or higher, has increased significantly over the last two decades[16]

-Higher rate of construction and land use over the past years due to industrialisation

-Greater consumption peaks for water and electricity

-Wider use of wasteland, wetlands and forested places for housing and other developments

Actions to initiate

From the above suggested list of issues, it is important to initiate action from the three groups identified in the research. It is important to note that all stakeholders might not be directly involved in climatic and environmental issues but a need for coordination and synergy would be of utmost importance in this context.

Target Audience One Involvement

Concerning primary and secondary school students, a suggested initiative would be to gain knowledge of environmental hazards and related issues in classes in the form of coaching and learning. Participation in key projects that include posters, drawings and basic actions like developing a nature corner, cleanliness campaigns at school, among others would be useful. Constant involvement in environmental activities with accountability for good effort must be rewarded and promoted in the most welcoming manner. Not only will young people of today have to confront the major impacts of climate change in the near and far future, but they also have to understand their critical role as decision-makers and implementers in a climate-aware society. In the Caribbean, a similar environment as Mauritius, the Climate Change Centre views this role as pivotal, and the successful dissemination of information among the youths will influence and enhance their knowledge, ultimately preparing them for the challenges ahead [17].

Target Audience Two Involvement

Regarding the community, it is important to review existing strategies. For instance, the reduction of pesticides in farming with more orientation to bio production must be encouraged. Methane production from agricultural farming must be reduced. Since humans raise these animals for food, the emissions are considered human-related. Globally, the Agriculture sector is the primary source of CH₄ emissions [18]. The protection of the green environment through pro-active actions like composting instead of burning waste, better construction opportunities involving the use of natural light as a means of saving energy, the purchase of eco lamps would be the first important steps taken to better face the impending dilemmas.

Target Audience Three Involvement

At the NGO level, it would be imperative for opinion leaders and teams to be greater focused on climatic change issues. Cleaning campaigns might be an initial approach to caring for better sustainable environment. The

pollution in rivers and natural lakes should be a prime focus for NGOs. The flash floods of 2013 could be better addressed if the problem of obstructions of ditches and gutters would have been effectively addressed. Similarly, NGOs could act as whistle-blowers when businesses are found to be environmentally irresponsible [19]. In compliance with the Police Standing Orders, the Eastern Police Division in Mauritius conducted an evacuation drill at Ile aux Cerfs on the 18 May 2012. Prior to the exercise, a first coordinating meeting was held on 19 April 2012 where representatives from different Ministries, Departments, NGOs were briefed on their established role and responsibilities in accordance with The Cyclone and other Natural Disasters Scheme [20].

Advocacy nongovernmental organisations have the largest influence on the outcome of climate negotiations when they mobilise public pressure in collaboration with the media. Environmental NGOs can pursue insider strategies by joining government delegations as advisors or pursue outsider strategies as either lobbyists inside the negotiation venue or as activists [21].

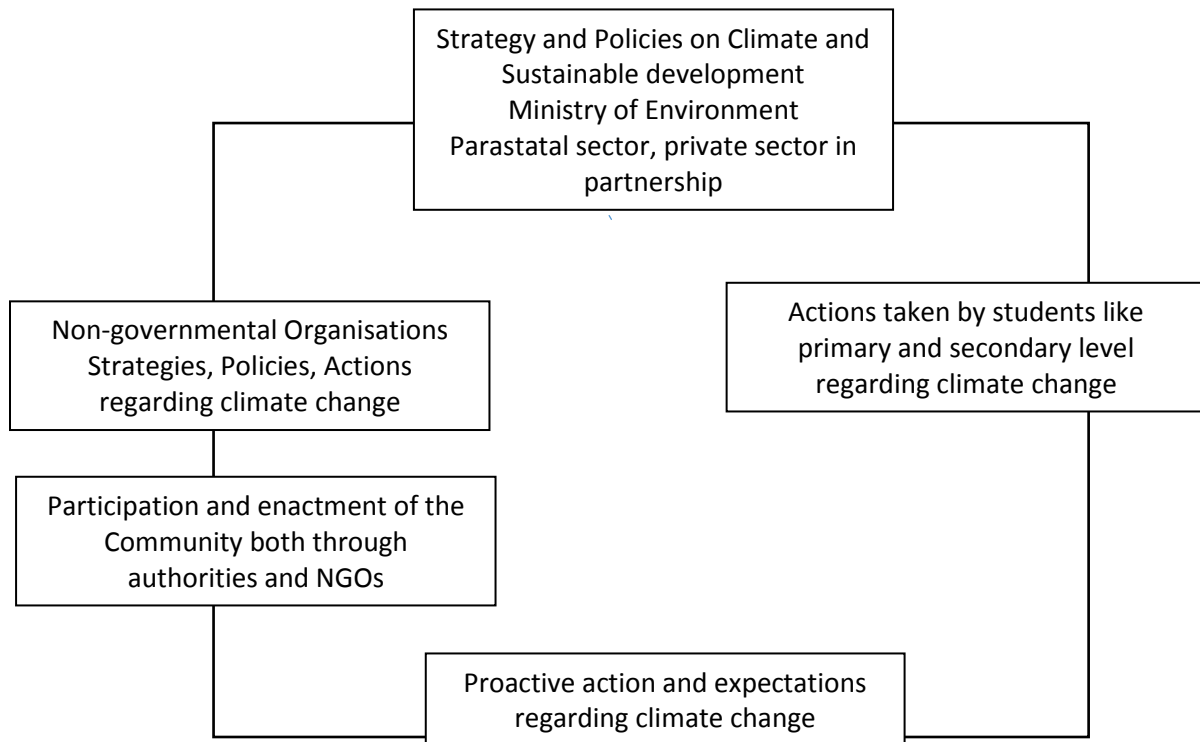
A model for implementation of policies on climate change and sustainable development

A model can be used to interpret Citizen Engagement in the Mauritian context. First, there needs to be the support of the authorities to the three target audiences identified in this research. The Ministry of Environment and Sustainable Development along with partners from the private sector, legislation and law enforcement people should be the major instruments enacting the position of a small-island state like Mauritius in its contribution to face climate change and sustainable development [22].

This structure should channel its decisions to the three key target audiences with special emphasis on short and mid-term objectives regarding climate changes as those mentioned in figure 1. There should be an ongoing feedback mechanism to see that the decisions are effectively implemented and that follow-up is undertaken in a pro-active manner. At this

level, management through transformational leadership would be required.

Table 2: A model for implementation



Source: Author's personal model

Limitations/ Delimitations of this paper

This paper relies on substantive secondary data available from various authoritative sources and is in no sense a research-based hypothesis paper. It analyses information from data that is available but it innovates in the sense that it

caters to target audiences from an individual perspective. Being a reflection hence more a critical and a review paper, this research does not elaborate on data that is interpreted but leads to clarifying the role and contribution of selected target audiences in Mauritius in a concise and efficient manner.

References

- [1]***Flooding in Mauritius capital Port Louis: 11 killed***, <http://www.disaster-report.com/2013/03/flooding-in-mauritius-Accessed> **on 19th June 2014.**
- [2]*Projet follies à Blue-Bay: La boue menace à nouveau le parc marin*, Le Mauricien, 20th November 2000.
- [3] **Climate change: A three-degree warmer world by 2050? IRIN News, 19th June 2004.**
- [4]Mauritius Meteorological services, website.
- [5]*Climate Hot map, Global warming effects around the world*, (2011), Union of Concerned Scientists.
- [6]R.Few, A.Brown, &E.Tompkins(2005) Public participation and climate change adaptation, Tyndall Centre for Climatic Change Research.
- [7] W.N, Adger, (2001) Scales of governance and environmental justice for adaptation and mitigation of climate change, *Journal of International Development*, 13, 921-931.
- [8] M. Filippini& S. Pachauri (2004) Elasticities of electricity demand in urban Indian households, *Energy Policy*, Elsevier, *Energy Policy* 32 (2004) 429–436
- [9] Children in a climate change research programme (2011) http://www.childreninachangingclimate.org/database/CCC/Publications/CCC_Children-Climate-Disasters-Bibliography.pdf, Retrieved on 19th June 2014.
- [10]Ibid.
- [11]The UNESCO climate change initiative climate change education for sustainable development, 2010, <http://unesdoc.unesco.org>, Retrieved on 15th June 2014.
- [12] Ibid.
- [13] E.J, Treby, and M.J, Clark, M.J. (2004) ‘Refining a practical approach to participatory decision-making: an example from coastal zone management’, *Coastal Management*, , 32, 353-372
- [14] R.Few, (2003) ‘Participation or containment? Insights from the planning of protected areas in Belize’. Aldershot, Ashgate, 23-44.
- [15]Y. Mazda, D. Kobashi and S. Okada (2005) "Tidal-Scale Hydrodynamics within Mangrove Swamps" *Wetlands Ecology and Management* 13(6): pp. 647-655.
- [16]Strategies on sustainable development, Mauritius Meteorological services, website.
- [17] ***Empowering people to act on climate change*, (2014) Youth Forum, The Caribbean Community Climate Change Centre**, <http://www.caribbeanclimate.bz/featured-articles/youth-forum.html>, **accessed on 24th June 2014.**

[18]EPA (2010). *Methane and Nitrous Oxide Emissions from Natural Sources*, U.S. Environmental Protection Agency, Washington, DC, USA.

[19] Sumatran Stress History for Forecasting Near-Future Tsunami Inundation, (2014) Environmental Sciences Research Institute, University of Ulster.

[20]*Tsunami Simulation Exercise at Ile aux Cerfs*, The Police Journal (2012), p 16, Vol 1 no 2.

[21] K. Rietig, (2011) Public pressure versus lobbying – how do Environmental NGOs matter most in climate negotiations? Centre for Climate Change Economics and Policy Working Paper No. 79.

[22] Ministry of Environment and Sustainable Development, environment.gov.mu, retrieved on 20th June 2014.

About Author:

Education

Doctor of Business Administration 2008 – 2013

SMC University, Switzerland

Master of Business Administration 1997 – 1999

Napier University, Edinburgh, Scotland

Post Graduate Diploma in Marketing 1992 – 1994

The Chartered Institute of Marketing, UK

Diploma in Administrative Management 1988 – 1990

The Institute of Administrative Management, UK

Teacher's Certificate in Education (Primary) 1986-1988

Mauritius Institute of Education

Positions

Lecturer in Management, HRM, International Business at ex-SDIM

First Head of Department, Management and Communication 2002-2004

Certifications

MQA Certified Trainer at Bachelor Level

Mauritius Quality Assurance

External Examiner – University of Technology, Mauritius 2003-2006

Examiner for Mauritius Examination Syndicate – Public Exam Marker 2011

Publications

Books

People and Talent Management-Pan Art publications-141pp-2014

An analysis of HRD Strategies in Secondary Schools –125 pp- LAP Publishing 2012

Evolutionary Concepts in HRM- National Library of Mauritius 2009-225pp

Introduction to Public Sector Management - National Library of Mauritius 2005-125pp

The Mauritian Workplace - National Library of Mauritius 2003-220pp

Conference Papers

Empowering the Youth through HRD –HRDC International Conference October 2013*

FDI through Franchises- Isitech National Conference April 2012

Tertiary Education in the Indian Ocean Region- TEC International Conference June 2011

Newspaper Contributions

Over 100 articles written in the national press since 2002 in Le Mauricien, L'Express, Business Magazine and Le Matinal including all.Africa.com. Also contributed to l'Express Dossier in 2006, 2009. Several Business Magazine dossiers between 2002-2007.

Double blind peer-reviewed Journals:

1. Female Empowerment in Mauritian Trade Unions: A Contemporary Analysis, International Journal of Advances in Management and Economics, ISSN: 2278-3369

2. Technological Advancement in the Written Press and New Reading Patterns: A Press Survival Perspective in Mauritius. J Mass Communication & Journalism 3:162. doi: 10.4172/2165-7912.1000162

3. Trade Unions' Strategy in the Context of Globalisation: A Case Analysis on an open-market economy, Mauritius. Global Journal of Commerce and Management Perspective, Vol.3(1):100-105 (January–February,2014) ISSN: 2319 – 7285
4. Youth empowerment as a human resource development strategy in Mauritius, Issues in Business Management and Economics Vol.1 (8), pp. 218-229, December 2013 ISSN 2350-157X
5. The Case for Digital Preservation of the Press and Audio-Visual Documents in Mauritius, Global Journal of Commerce and Management Perspective, Vol.3 (2):27-32 (March–April, 2014) ISSN: 2319 – 7285
6. The Need for Effective Leadership in Talent Management in Mauritius, International Letters of Social and Humanistic Sciences 16(1) (2014) 39-48 ISSN 2300-2697
7. The Evolution of Industrial Democracy in a small-island economy, Mauritius, International Letters of Social and Humanistic Sciences 18 (2014) 39-47 ISSN 2300-2697

Also: Member of Editorial Board, Journal of Mass Communication and Journalism, USA.

Social

Trainer-Women Entrepreneurship Programme 2011

Organiser of 10 talks and Seminars at ex-SDIM since 2010

Organiser of Cine Clubs at ex-SDIM since 2010

Presenter of paper in SDIM Seminar 2007

Others

Secretary Advisory Committee –SDIM –1996-1998

Course development-Full and part-time HRM programmes –SDIM 2003

Course development –Master Management UDM for 2014